

GVR Distribution System

Maximum Day + 5000 GPM FF 2750PZ

Model Output

## Golden Valley Ranch Distribution System - Max Day + FF Node Report

ID	Demand (mgd)	Elevation (ft)	Head (ft)	Pressure (psi)
10	0.000	2,690.00	2,745.62	24.10
14	0.222	2,565.00	2,717.44	66.05
16	0.083	2,542.00	2,717.40	76.00
212	0.000	2,542.00	2,717.40	76.00
270	0.129	2,518.00	2,717.37	86.38
272	0.203	2,515.00	2,646.95	57.17
274	0.102	2,495.00	2,646.80	65.77
276	0.000	2,515.00	2,646.95	57.17
356	0.418	2,495.00	2,645.63	65.27
448	0.102	2,490.00	2,646.79	67.94
450	0.436	2,485.00	2,643.82	68.82
452	0.258	2,465.00	2,643.82	77.48
454	0.232	2,475.00	2,646.79	74.44
456	0.816	2,500.00	2,648.63	64.40
472	0.318	2,625.00	2,717.38	40.03
474	0.400	2,518.00	2,716.65	86.08
480	0.295	2,560.00	2,718.81	68.81
482	0.420	2,519.21	2,646.51	55.16
490	0.000	2,570.54	2,724.07	66.53
492	0.000	2,597.29	2,729.19	57.15
498	0.237	2,567.00	2,715.77	64.46
526	0.000	2,502.00	2,715.22	92.39
528	0.000	2,557.00	2,715.01	68.46
534	0.554	2,592.00	2,719.08	55.06
536	0.000	2,550.00	2,714.84	71.42
538	0.418	2,620.00	2,717.38	42.19
540	4.311	2,529.00	2,713.95	80.14
542	4.311	2,540.00	2,712.39	74.70
544	0.000	2,540.00	2,716.78	76.60
546	0.437	2,565.00	2,719.06	66.76
550	0.666	2,580.00	2,725.09	62.87
56	0.337	2,600.00	2,717.39	50.86
570	0.257	2,460.00	2,643.00	79.30
572	0.447	2,460.00	2,645.42	80.34
576	0.483	2,478.00	2,645.42	72.54
588	0.681	2,515.00	2,727.04	91.88
600	1.542	2,560.00	2,720.58	69.58
604	0.400	2,572.00	2,718.60	63.52
608	2.580	2,525.00	2,648.06	53.32
616	0.000	2,555.00	2,717.42	70.38
618	0.243	2,475.00	2,647.25	74.64
636	4.311	2,550.00	2,711.96	70.18
638	0.496	2,572.00	2,714.82	61.88
646	0.211	2,430.00	2,644.16	92.80
648	0.146	2,410.00	2,643.25	101.07
650	0.124	2,430.00	2,642.76	92.19
662	0.000	2,718.00	2,832.10	49.44
666	1.008	2,655.00	2,820.64	71.77
672	0.258	2,621.00	2,821.16	86.73

## Golden Valley Ranch Distribution System - Max Day + FF Node Report

ID	Demand (mgd)	Elevation (ft)	Head (ft)	Pressure (psi)
674	0.272	2,625.00	2,819.83	84.42
676	0.000	2,622.00	2,819.07	85.39
680	0.466	2,642.00	2,818.26	76.37
682	0.000	2,660.00	2,817.93	68.43
688	0.000	2,536.00	2,665.00	55.90
700	0.000	2,475.00	2,665.00	82.33
702	0.000	2,500.00	2,665.00	71.49
704	0.000	2,440.00	2,665.00	97.49
706	0.000	2,470.00	2,646.80	76.61
708	0.000	2,560.00	2,665.00	45.50
710	0.000	2,640.00	2,850.00	90.99
712	0.000	2,610.00	2,850.00	103.99
716	0.000	2,657.00	2,750.00	40.30
718	0.000	2,670.00	2,750.00	34.66
720	0.000	2,680.00	2,750.00	30.33
722	0.000	2,660.00	2,740.24	34.77
724	0.000	2,625.00	2,850.00	97.49
726	0.237	2,505.00	2,646.95	61.51
728	2.553	2,621.00	2,824.16	88.03
730	0.899	2,645.00	2,814.31	73.36
732	0.000	2,555.00	2,665.00	47.66
734	0.000	2,610.00	2,750.00	60.66
736	0.334	2,545.00	2,732.18	81.10
738	0.140	2,480.00	2,644.65	71.34
740	0.244	2,455.00	2,644.11	81.94
742	0.320	2,447.00	2,644.33	85.50
744	0.364	2,523.00	2,647.39	53.90
746	1.276	2,652.00	2,814.72	70.51
748	2.580	2,445.00	2,642.21	85.45

## Golden Valley Ranch Distribution System - Max Day + FF Pipe Report

ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (mgd)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/kft)
11	10	7000	2191	24	130	-7.846	3.86	4.38	2.00
13	10	722	2687	24	130	7.846	3.86	5.37	2.00
17	616	14	1029	24	130	-0.613	0.30	0.02	0.02
19	16	270	2642	24	130	0.530	0.26	0.04	0.01
287	16	212	590	8	130	0.000	0.00	0.00	0.00
369	726	272	1032	24	130	0.203	0.10	0.00	0.00
371	272	276	691	10	130	0.000	0.00	0.00	0.00
469	274	356	632	8	130	0.418	1.85	1.17	1.85
565	56	472	2158	24	130	0.298	0.15	0.01	0.01
577	448	454	1689	24	130	-0.194	0.10	0.00	0.00
579	448	738	4499	12	130	0.583	1.15	2.14	0.48
581	450	452	2254	12	130	0.008	0.02	0.00	0.00
583	452	740	2875	12	130	-0.250	0.49	0.29	0.10
585	454	706	1528	24	130	-0.426	0.21	0.01	0.01
59	14	56	2604	24	130	0.636	0.31	0.05	0.02
591	448	482	3356	12	130	0.225	0.44	0.27	0.08
609	270	474	418	8	130	0.400	1.78	0.71	1.71
615	480	14	1276	24	130	5.608	2.76	1.37	1.07
625	490	600	1744	24	130	7.845	3.86	3.49	2.00
627	492	490	2556	24	130	7.846	3.86	5.11	2.00
633	14	498	2718	24	130	4.138	2.04	1.66	0.61
663	528	498	1624	20	130	-2.232	1.58	0.77	0.47
665	528	540	2236	20	130	2.232	1.58	1.06	0.47
667	536	542	1527	20	130	4.311	3.06	2.45	1.60
673	534	550	3751	20	130	-4.310	3.06	6.01	1.60
675	472	538	2485	24	130	-0.019	0.01	0.00	0.00
677	538	534	4070	24	130	-3.367	1.66	1.70	0.42
679	540	526	3063	20	130	-2.079	1.48	1.27	0.42
681	526	544	3765	20	130	-2.079	1.48	1.57	0.42
683	544	536	1112	20	130	4.520	3.21	1.95	1.75
685	544	546	1570	24	130	-6.599	3.25	2.28	1.45
687	546	534	1868	24	130	-0.388	0.19	0.01	0.01
691	550	736	3388	20	130	-4.976	3.53	7.09	2.09
727	734	7022	9771	24	130	0.000	0.00	0.00	0.00
733	588	546	5416	24	130	6.648	3.27	7.97	1.47
747	600	480	1330	24	130	6.303	3.10	1.77	1.33
751	480	604	896	12	130	0.400	0.79	0.21	0.24
755	7010	608	9244	24	130	4.621	2.28	6.94	0.75
765	616	16	1013	24	130	0.613	0.30	0.02	0.02
767	618	456	2694	24	130	-3.759	1.85	1.38	0.51
771	608	744	4088	24	130	2.041	1.01	0.68	0.17
775	274	448	455	24	130	0.717	0.35	0.01	0.02
781	7022	736	10924	30	130	12.639	3.98	17.82	1.63
785	638	538	3259	20	130	-2.929	2.08	2.56	0.78
787	636	638	1784	20	130	-4.311	3.06	2.86	1.60
809	646	648	3529	16	130	0.896	0.99	0.92	0.26
811	648	650	2592	16	130	0.750	0.83	0.48	0.19
813	650	748	1350	16	130	1.152	1.28	0.56	0.41

## Golden Valley Ranch Distribution System - Max Day + FF Pipe Report

ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (mgd)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/kft)
821	572	706	1157	16	130	-2.049	2.27	1.39	1.20
823	576	456	2405	16	130	-2.169	2.40	3.20	1.33
825	576	570	2894	16	130	1.686	1.87	2.42	0.84
827	618	742	3077	12	130	0.847	1.67	2.92	0.95
833	662	7064	11881	24	130	-6.732	3.32	17.90	1.51
835	662	728	5268	24	130	6.732	3.32	7.94	1.51
837	666	682	5245	16	130	1.299	1.44	2.71	0.52
845	672	674	1730	16	130	1.614	1.79	1.33	0.77
847	674	676	1383	16	130	1.342	1.49	0.76	0.55
853	682	680	1305	16	130	-0.876	0.97	0.32	0.25
855	682	746	2400	16	130	2.175	2.41	3.22	1.34
859	672	728	2958	16	130	-1.872	2.07	3.00	1.01
865	708	7030	6098	30	130	0.000	0.00	0.00	0.00
877	722	492	5527	24	130	7.846	3.86	11.06	2.00
881	700	702	2623	20	130	0.000	0.00	0.00	0.00
883	702	688	3059	24	130	0.000	0.00	0.00	0.00
885	704	700	15658	20	130	0.000	0.00	0.00	0.00
887	646	572	3271	16	130	-1.107	1.23	1.26	0.38
889	498	638	3442	20	130	1.669	1.18	0.95	0.28
891	638	536	2594	20	130	-0.208	0.15	0.02	0.01
893	706	618	1637	24	130	-2.670	1.32	0.45	0.27
895	482	706	4626	12	130	-0.195	0.39	0.29	0.06
897	688	708	2927	24	130	0.000	0.00	0.00	0.00
899	7030	456	10833	24	130	6.743	3.32	16.37	1.51
901	7064	710	12536	24	130	0.000	0.00	0.00	0.00
903	712	724	2028	12	130	0.000	0.00	0.00	0.00
911	716	718	3621	12	130	0.000	0.00	0.00	0.00
913	718	720	1228	20	130	0.000	0.00	0.00	0.00
919	728	666	2355	16	130	2.308	2.56	3.52	1.50
921	676	680	1482	16	130	1.342	1.49	0.81	0.55
923	720	7000	5019	24	130	0.000	0.00	0.00	0.00
925	724	710	679	20	130	0.000	0.00	0.00	0.00
927	726	274	2408	24	130	1.236	0.61	0.16	0.07
929	732	708	771	24	130	0.000	0.00	0.00	0.00
931	736	588	2915	24	130	7.329	3.61	5.14	1.76
933	738	450	2877	12	130	0.444	0.87	0.82	0.29
935	740	572	3740	12	130	-0.494	0.97	1.31	0.35
937	742	650	3994	12	130	0.526	1.04	1.57	0.39
939	744	726	3767	24	130	1.676	0.83	0.43	0.12
941	746	730	1545	16	130	0.899	1.00	0.40	0.26
943	748	570	1295	16	130	-1.429	1.58	0.80	0.62

**Golden Valley Ranch Distribution System - Max Day + FF Tank Report**

ID	Demand (mgd)	Elevation (ft)	Head (ft)	Pressure (psi)	% Full (%)	Volume (MG)	Level (ft)
7000	-7.85	2,725.00	2,750.00	10.83	100	1.01	25
7010	-4.621	2,625.00	2,655.00	13	100	0.99	30
7022	-12.639	2,725.00	2,750.00	10.83	100	1.01	25
7024	0	1,668.00	1,668.00	0	100	0	0
7026	0	1,668.00	1,668.00	0	100	0	0
7028	0	1,668.00	1,668.00	0	100	0	0
7030	-6.743	2,635.00	2,665.00	13	100	0.99	30
7044	0	1,668.00	1,668.00	0	100	0	0
7046	0	1,668.00	1,668.00	0	100	0	0
7050	0	1,668.00	1,668.00	0	100	0	0
7054	0	1,668.00	1,668.00	0	100	0	0
7056	0	1,668.00	1,668.00	0	100	0	0
7058	0	1,668.00	1,668.00	0	100	0	0
7060	0	1,668.00	1,668.00	0	100	0	0
7062	0	1,668.00	1,668.00	0	100	0	0
7064	-6.732	2,825.00	2,850.00	10.83	100	1.01	25
7068	0	1,668.00	1,668.00	0	100	0	0
7070	0	1,668.00	1,668.00	0	100	0	0
7074	0	1,668.00	1,668.00	0	100	0	0
7076	0	1,668.00	1,668.00	0	100	0	0
7078	0	1,668.00	1,668.00	0	100	0	0
7080	0	1,668.00	1,668.00	0	100	0	0

GVR Distribution System

Maximum Day + 3000 GPM FF 2850PZ

Model Output

## Golden Valley Ranch Distribution System - Max Day + FF Node Report

ID	Demand (mgd)	Elevation (ft)	Head (ft)	Pressure (psi)
10	0.000	2,690.00	2,748.04	25.15
14	0.222	2,565.00	2,735.87	74.04
16	0.083	2,542.00	2,735.84	83.99
212	0.000	2,542.00	2,735.84	83.99
270	0.129	2,518.00	2,735.80	94.37
272	0.203	2,515.00	2,646.95	57.18
274	0.102	2,495.00	2,646.80	65.77
276	0.000	2,515.00	2,646.95	57.18
356	0.418	2,495.00	2,645.63	65.27
448	0.102	2,490.00	2,646.79	67.94
450	0.436	2,485.00	2,643.82	68.82
452	0.258	2,465.00	2,643.82	77.48
454	0.232	2,475.00	2,646.79	74.44
456	0.816	2,500.00	2,648.63	64.40
472	0.318	2,625.00	2,735.87	48.04
474	0.400	2,518.00	2,735.09	94.06
480	0.295	2,560.00	2,736.26	76.37
482	0.420	2,519.21	2,646.51	55.16
490	0.000	2,570.54	2,738.43	72.75
492	0.000	2,597.29	2,740.71	62.14
498	0.237	2,567.00	2,735.52	73.02
526	0.000	2,502.00	2,735.55	101.20
528	0.000	2,557.00	2,735.38	77.29
534	0.554	2,592.00	2,736.64	62.67
536	0.000	2,550.00	2,735.40	80.33
538	0.418	2,620.00	2,735.89	50.22
540	1.911	2,529.00	2,735.20	89.35
542	1.911	2,540.00	2,734.85	84.43
544	0.000	2,540.00	2,735.98	84.92
546	0.437	2,565.00	2,736.64	74.37
550	0.666	2,580.00	2,738.87	68.84
56	0.337	2,600.00	2,735.87	58.87
570	0.257	2,460.00	2,643.00	79.30
572	0.447	2,460.00	2,645.42	80.34
576	0.483	2,478.00	2,645.42	72.54
588	0.681	2,515.00	2,739.75	97.38
600	1.542	2,560.00	2,736.87	76.64
604	0.400	2,572.00	2,736.05	71.08
608	2.580	2,525.00	2,648.06	53.32
616	0.000	2,555.00	2,735.85	78.36
618	0.243	2,475.00	2,647.25	74.64
636	1.911	2,550.00	2,734.70	80.03
638	0.496	2,572.00	2,735.34	70.77
646	0.211	2,430.00	2,644.16	92.80
648	0.146	2,410.00	2,643.25	101.07
650	0.124	2,430.00	2,642.76	92.19
662	0.000	2,718.00	2,805.16	37.77
666	1.008	2,655.00	2,781.76	54.93
672	0.258	2,621.00	2,782.28	69.88

**Golden Valley Ranch Distribution System - Max Day + FF Node Report**

ID	Demand (mgd)	Elevation (ft)	Head (ft)	Pressure (psi)
674	0.272	2,625.00	2,780.95	67.57
676	0.000	2,622.00	2,780.19	68.54
680	0.466	2,642.00	2,779.38	59.53
682	0.000	2,660.00	2,779.06	51.59
688	0.000	2,536.00	2,665.00	55.90
700	0.000	2,475.00	2,665.00	82.33
702	0.000	2,500.00	2,665.00	71.49
704	0.000	2,440.00	2,665.00	97.49
706	0.000	2,470.00	2,646.80	76.61
708	0.000	2,560.00	2,665.00	45.50
710	0.000	2,640.00	2,850.00	90.99
712	0.000	2,610.00	2,850.00	103.99
716	0.000	2,657.00	2,750.00	40.30
718	0.000	2,670.00	2,750.00	34.66
720	0.000	2,680.00	2,750.00	30.33
722	0.000	2,660.00	2,745.64	37.11
724	0.000	2,625.00	2,850.00	97.49
726	0.237	2,505.00	2,646.95	61.51
728	6.873	2,621.00	2,785.28	71.18
730	0.899	2,645.00	2,775.44	56.52
732	0.000	2,555.00	2,665.00	47.66
734	0.000	2,610.00	2,750.00	60.66
736	0.334	2,545.00	2,741.99	85.36
738	0.140	2,480.00	2,644.65	71.34
740	0.244	2,455.00	2,644.11	81.94
742	0.320	2,447.00	2,644.33	85.50
744	0.364	2,523.00	2,647.39	53.90
746	1.276	2,652.00	2,775.84	53.66
748	2.580	2,445.00	2,642.21	85.45

## Golden Valley Ranch Distribution System - Max Day + FF Pipe Report

ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (mgd)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/kft)
11	10	7000	2191	24	130	-5.076	2.50	1.96	0.89
13	10	722	2687	24	130	5.076	2.50	2.40	0.89
17	616	14	1029	24	130	-0.613	0.30	0.02	0.02
19	16	270	2642	24	130	0.530	0.26	0.04	0.01
287	16	212	590	8	130	0.000	0.00	0.00	0.00
369	726	272	1032	24	130	0.203	0.10	0.00	0.00
371	272	276	691	10	130	0.000	0.00	0.00	0.00
469	274	356	632	8	130	0.418	1.85	1.17	1.85
565	56	472	2158	24	130	-0.129	0.06	0.00	0.00
577	448	454	1689	24	130	-0.194	0.10	0.00	0.00
579	448	738	4499	12	130	0.583	1.15	2.14	0.48
581	450	452	2254	12	130	0.008	0.02	0.00	0.00
583	452	740	2875	12	130	-0.250	0.49	0.29	0.10
585	454	706	1528	24	130	-0.426	0.21	0.01	0.01
59	14	56	2604	24	130	0.209	0.10	0.01	0.00
591	448	482	3356	12	130	0.225	0.44	0.27	0.08
609	270	474	418	8	130	0.400	1.78	0.71	1.71
615	480	14	1276	24	130	2.838	1.40	0.39	0.30
625	490	600	1744	24	130	5.076	2.50	1.56	0.89
627	492	490	2556	24	130	5.076	2.50	2.28	0.89
633	14	498	2718	24	130	1.795	0.88	0.35	0.13
663	528	498	1624	20	130	-0.875	0.62	0.14	0.08
665	528	540	2236	20	130	0.875	0.62	0.19	0.08
667	536	542	1527	20	130	1.911	1.36	0.54	0.36
673	534	550	3751	20	130	-2.527	1.79	2.24	0.60
675	472	538	2485	24	130	-0.446	0.22	0.03	0.01
677	538	534	4070	24	130	-2.151	1.06	0.74	0.18
679	540	526	3063	20	130	-1.036	0.73	0.35	0.11
681	526	544	3765	20	130	-1.036	0.73	0.43	0.11
683	544	536	1112	20	130	2.348	1.67	0.58	0.52
685	544	546	1570	24	130	-3.384	1.67	0.66	0.42
687	546	534	1868	24	130	0.178	0.09	0.00	0.00
691	550	736	3388	20	130	-3.193	2.26	3.12	0.92
727	734	7022	9771	24	130	0.000	0.00	0.00	0.00
733	588	546	5416	24	130	3.999	1.97	3.11	0.57
747	600	480	1330	24	130	3.533	1.74	0.61	0.46
751	480	604	896	12	130	0.400	0.79	0.21	0.24
755	7010	608	9244	24	130	4.621	2.28	6.94	0.75
765	616	16	1013	24	130	0.613	0.30	0.02	0.02
767	618	456	2694	24	130	-3.759	1.85	1.38	0.51
771	608	744	4088	24	130	2.041	1.01	0.68	0.17
775	274	448	455	24	130	0.717	0.35	0.01	0.02
781	7022	736	10924	30	130	8.208	2.59	8.01	0.73
785	638	538	3259	20	130	-1.286	0.91	0.56	0.17
787	636	638	1784	20	130	-1.911	1.36	0.63	0.36
809	646	648	3529	16	130	0.896	0.99	0.92	0.26
811	648	650	2592	16	130	0.750	0.83	0.48	0.19
813	650	748	1350	16	130	1.152	1.28	0.56	0.41

## Golden Valley Ranch Distribution System - Max Day + FF Pipe Report

ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (mgd)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/kft)
821	572	706	1157	16	130	-2.049	2.27	1.39	1.20
823	576	456	2405	16	130	-2.169	2.40	3.20	1.33
825	576	570	2894	16	130	1.686	1.87	2.42	0.84
827	618	742	3077	12	130	0.847	1.67	2.92	0.95
833	662	7064	11881	24	130	-11.052	5.44	44.84	3.77
835	662	728	5268	24	130	11.052	5.44	19.88	3.77
837	666	682	5245	16	130	1.299	1.44	2.71	0.52
845	672	674	1730	16	130	1.614	1.79	1.33	0.77
847	674	676	1383	16	130	1.342	1.49	0.76	0.55
853	682	680	1305	16	130	-0.876	0.97	0.32	0.25
855	682	746	2400	16	130	2.175	2.41	3.22	1.34
859	672	728	2958	16	130	-1.872	2.07	3.00	1.01
865	708	7030	6098	30	130	0.000	0.00	0.00	0.00
877	722	492	5527	24	130	5.076	2.50	4.94	0.89
881	700	702	2623	20	130	0.000	0.00	0.00	0.00
883	702	688	3059	24	130	0.000	0.00	0.00	0.00
885	704	700	15658	20	130	0.000	0.00	0.00	0.00
887	646	572	3271	16	130	-1.107	1.23	1.26	0.38
889	498	638	3442	20	130	0.683	0.48	0.18	0.05
891	638	536	2594	20	130	-0.438	0.31	0.06	0.02
893	706	618	1637	24	130	-2.670	1.32	0.45	0.27
895	482	706	4626	12	130	-0.195	0.39	0.29	0.06
897	688	708	2927	24	130	0.000	0.00	0.00	0.00
899	7030	456	10833	24	130	6.743	3.32	16.37	1.51
901	7064	710	12536	24	130	0.000	0.00	0.00	0.00
903	712	724	2028	12	130	0.000	0.00	0.00	0.00
911	716	718	3621	12	130	0.000	0.00	0.00	0.00
913	718	720	1228	20	130	0.000	0.00	0.00	0.00
919	728	666	2355	16	130	2.308	2.56	3.52	1.50
921	676	680	1482	16	130	1.342	1.49	0.81	0.55
923	720	7000	5019	24	130	0.000	0.00	0.00	0.00
925	724	710	679	20	130	0.000	0.00	0.00	0.00
927	726	274	2408	24	130	1.236	0.61	0.16	0.07
929	732	708	771	24	130	0.000	0.00	0.00	0.00
931	736	588	2915	24	130	4.680	2.31	2.24	0.77
933	738	450	2877	12	130	0.444	0.87	0.82	0.29
935	740	572	3740	12	130	-0.494	0.97	1.31	0.35
937	742	650	3994	12	130	0.526	1.04	1.57	0.39
939	744	726	3767	24	130	1.676	0.83	0.43	0.12
941	746	730	1545	16	130	0.899	1.00	0.40	0.26
943	748	570	1295	16	130	-1.429	1.58	0.80	0.62

**Golden Valley Ranch Distribution System - Max Day + FF Tank Report**

ID	Demand (mgd)	Elevation (ft)	Head (ft)	Pressure (psi)	% Full (%)	Volume (MG)	Level (ft)
7000	-5.076	2,725.00	2,750.00	10.833	100	1.012	25
7010	-4.621	2,625.00	2,655.00	12.999	100	0.991	30
7022	-8.208	2,725.00	2,750.00	10.833	100	1.012	25
7024	0.000	1,668.00	1,668.00	0	100	0.000	0
7026	0.000	1,668.00	1,668.00	0	100	0.000	0
7028	0.000	1,668.00	1,668.00	0	100	0.000	0
7030	-6.743	2,635.00	2,665.00	12.999	100	0.991	30
7044	0.000	1,668.00	1,668.00	0	100	0.000	0
7046	0.000	1,668.00	1,668.00	0	100	0.000	0
7050	0.000	1,668.00	1,668.00	0	100	0.000	0
7054	0.000	1,668.00	1,668.00	0	100	0.000	0
7056	0.000	1,668.00	1,668.00	0	100	0.000	0
7058	0.000	1,668.00	1,668.00	0	100	0.000	0
7060	0.000	1,668.00	1,668.00	0	100	0.000	0
7062	0.000	1,668.00	1,668.00	0	100	0.000	0
7064	-11.052	2,825.00	2,850.00	10.833	100	1.012	25
7068	0.000	1,668.00	1,668.00	0	100	0.000	0
7070	0.000	1,668.00	1,668.00	0	100	0.000	0
7074	0.000	1,668.00	1,668.00	0	100	0.000	0
7076	0.000	1,668.00	1,668.00	0	100	0.000	0
7078	0.000	1,668.00	1,668.00	0	100	0.000	0
7080	0.000	1,668.00	1,668.00	0	100	0.000	0

GVR Distribution System  
Peak Hour  
Model Output

## Golden Valley Ranch Distribution System - Peak Hour Node Report

ID	Demand (mgd)	Elevation (ft)	Head (ft)	Pressure (psi)
10	0.000	2,690.00	2,744.48	23.61
14	0.390	2,565.00	2,710.17	62.9
16	0.150	2,542.00	2,710.07	72.83
212	0.000	2,542.00	2,710.07	72.83
270	0.230	2,518.00	2,709.97	83.18
272	0.360	2,515.00	2,624.49	47.44
274	0.180	2,495.00	2,623.51	55.68
276	0.000	2,515.00	2,624.49	47.44
356	0.730	2,495.00	2,620.22	54.26
448	0.180	2,490.00	2,623.41	57.81
450	0.760	2,485.00	2,614.92	56.29
452	0.450	2,465.00	2,614.92	64.96
454	0.410	2,475.00	2,623.36	64.28
456	1.430	2,500.00	2,626.90	54.99
472	0.560	2,625.00	2,710.16	36.9
474	0.700	2,518.00	2,707.96	82.31
480	0.520	2,560.00	2,711.27	65.54
482	0.740	2,519.21	2,622.59	44.79
490	0.000	2,570.54	2,717.37	63.62
492	0.000	2,597.29	2,723.81	54.82
498	0.410	2,567.00	2,709.18	61.61
526	0.000	2,502.00	2,709.25	89.8
528	0.000	2,557.00	2,708.79	65.77
534	0.970	2,592.00	2,712.32	52.14
536	0.000	2,550.00	2,708.83	68.82
538	0.730	2,620.00	2,710.23	39.1
540	3.340	2,529.00	2,708.27	77.68
542	3.340	2,540.00	2,707.30	72.49
544	0.000	2,540.00	2,710.47	73.86
546	0.760	2,565.00	2,712.33	63.84
550	1.170	2,580.00	2,718.63	60.07
56	0.590	2,600.00	2,710.16	47.73
570	0.450	2,460.00	2,611.72	65.74
572	0.780	2,460.00	2,619.32	69.03
576	0.840	2,478.00	2,618.21	60.75
588	1.190	2,515.00	2,721.10	89.3
600	2.700	2,560.00	2,712.98	66.29
604	0.700	2,572.00	2,710.67	60.09
608	4.510	2,525.00	2,629.95	45.48
616	0.000	2,555.00	2,710.12	67.21
618	0.420	2,475.00	2,624.11	64.61
636	3.340	2,550.00	2,706.88	67.97
638	0.870	2,572.00	2,708.66	59.22
646	0.370	2,430.00	2,615.56	80.4
648	0.260	2,410.00	2,612.77	87.86
650	0.220	2,430.00	2,611.28	78.55
662	0.000	2,718.00	2,799.53	35.33
666	1.760	2,655.00	2,767.23	48.63
672	0.450	2,621.00	2,768.69	64

**Golden Valley Ranch Distribution System - Peak Hour Node Report**

ID	Demand (mgd)	Elevation (ft)	Head (ft)	Pressure (psi)
674	0.480	2,625.00	2,764.94	60.63
676	0.000	2,622.00	2,762.80	61.01
680	0.820	2,642.00	2,760.51	51.35
682	0.000	2,660.00	2,759.60	43.16
688	0.000	2,536.00	2,665.00	55.9
700	0.000	2,475.00	2,665.00	82.33
702	0.000	2,500.00	2,665.00	71.49
704	0.000	2,440.00	2,665.00	97.49
706	0.000	2,470.00	2,623.35	66.45
708	0.000	2,560.00	2,665.00	45.5
710	0.000	2,640.00	2,850.00	90.99
712	0.000	2,610.00	2,850.00	103.99
716	0.000	2,657.00	2,750.00	40.3
718	0.000	2,670.00	2,750.00	34.66
720	0.000	2,680.00	2,750.00	30.33
722	0.000	2,660.00	2,737.72	33.68
724	0.000	2,625.00	2,850.00	97.49
726	0.410	2,505.00	2,624.49	51.78
728	4.470	2,621.00	2,777.15	67.66
730	1.570	2,645.00	2,749.40	45.24
732	0.000	2,555.00	2,665.00	47.66
734	0.000	2,610.00	2,750.00	60.66
736	0.590	2,545.00	2,727.41	79.04
738	0.240	2,480.00	2,617.29	59.49
740	0.430	2,455.00	2,615.70	69.63
742	0.560	2,447.00	2,615.79	73.14
744	0.640	2,523.00	2,626.75	44.95
746	2.230	2,652.00	2,750.54	42.7
748	4.510	2,445.00	2,609.60	71.32

## Golden Valley Ranch Distribution System - Peak Hour Pipe Report

ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (mgd)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/kft)
11	10	7000	2191	24	130	-8.882	4.37	5.52	2.52
13	10	722	2687	24	130	8.882	4.37	6.76	2.52
17	616	14	1029	24	130	-1.072	0.53	0.05	0.05
19	16	270	2642	24	130	0.927	0.46	0.10	0.04
287	16	212	590	8	130	0.000	0.00	0.00	0.00
369	726	272	1032	24	130	0.355	0.18	0.01	0.01
371	272	276	691	10	130	0.000	0.00	0.00	0.00
469	274	356	632	8	130	0.731	3.24	3.29	5.20
565	56	472	2158	24	130	-0.225	0.11	0.01	0.00
577	448	454	1689	24	130	0.797	0.39	0.05	0.03
579	448	738	4499	12	130	1.029	2.03	6.12	1.36
581	450	452	2254	12	130	0.022	0.04	0.00	0.00
583	452	740	2875	12	130	-0.430	0.85	0.78	0.27
585	454	706	1528	24	130	0.392	0.19	0.01	0.01
59	14	56	2604	24	130	0.365	0.18	0.02	0.01
591	448	482	3356	12	130	0.407	0.80	0.82	0.24
609	270	474	418	8	130	0.701	3.11	2.01	4.81
615	480	14	1276	24	130	4.967	2.45	1.10	0.86
625	490	600	1744	24	130	8.882	4.37	4.39	2.52
627	492	490	2556	24	130	8.882	4.37	6.44	2.52
633	14	498	2718	24	130	3.141	1.55	1.00	0.37
663	528	498	1624	20	130	-1.531	1.09	0.38	0.24
665	528	540	2236	20	130	1.531	1.09	0.53	0.24
667	536	542	1527	20	130	3.344	2.37	1.53	1.00
673	534	550	3751	20	130	-4.422	3.14	6.31	1.68
675	472	538	2485	24	130	-0.781	0.39	0.07	0.03
677	538	534	4070	24	130	-3.764	1.85	2.09	0.51
679	540	526	3063	20	130	-1.812	1.29	0.99	0.32
681	526	544	3765	20	130	-1.812	1.29	1.21	0.32
683	544	536	1112	20	130	4.110	2.92	1.63	1.47
685	544	546	1570	24	130	-5.922	2.92	1.87	1.19
687	546	534	1868	24	130	0.312	0.15	0.01	0.01
691	550	736	3388	20	130	-5.588	3.96	8.79	2.59
727	734	7022	9771	24	130	0.000	0.00	0.00	0.00
733	588	546	5416	24	130	6.998	3.45	8.77	1.62
747	600	480	1330	24	130	6.183	3.05	1.71	1.29
751	480	604	896	12	130	0.701	1.38	0.60	0.67
755	7010	608	9244	24	130	9.242	4.55	25.05	2.71
765	616	16	1013	24	130	1.072	0.53	0.05	0.05
767	618	456	2694	24	130	-5.496	2.71	2.79	1.04
771	608	744	4088	24	130	4.729	2.33	3.20	0.78
775	274	448	455	24	130	2.412	1.19	0.10	0.23
781	7022	736	10924	30	130	14.363	4.53	22.59	2.07
785	638	538	3259	20	130	-2.251	1.60	1.57	0.48
787	636	638	1784	20	130	-3.344	2.37	1.79	1.00
809	646	648	3529	16	130	1.634	1.81	2.78	0.79
811	648	650	2592	16	130	1.377	1.53	1.49	0.58
813	650	748	1350	16	130	2.091	2.32	1.68	1.25

## Golden Valley Ranch Distribution System - Peak Hour Pipe Report

ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (mgd)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/kft)
821	572	706	1157	16	130	-3.643	4.04	4.03	3.48
823	576	456	2405	16	130	-3.717	4.12	8.69	3.61
825	576	570	2894	16	130	2.872	3.18	6.49	2.24
827	618	742	3077	12	130	1.491	2.94	8.32	2.70
833	662	7064	11881	24	130	-11.782	5.80	50.47	4.25
835	662	728	5268	24	130	11.782	5.80	22.38	4.25
837	666	682	5245	16	130	2.274	2.52	7.63	1.46
845	672	674	1730	16	130	2.824	3.13	3.76	2.17
847	674	676	1383	16	130	2.348	2.60	2.13	1.54
853	682	680	1305	16	130	-1.533	1.70	0.91	0.70
855	682	746	2400	16	130	3.806	4.22	9.06	3.78
859	672	728	2958	16	130	-3.275	3.63	8.46	2.86
865	708	7030	6098	30	130	0.000	0.00	0.00	0.00
877	722	492	5527	24	130	8.882	4.37	13.91	2.52
881	700	702	2623	20	130	0.000	0.00	0.00	0.00
883	702	688	3059	24	130	0.000	0.00	0.00	0.00
885	704	700	15658	20	130	0.000	0.00	0.00	0.00
887	646	572	3271	16	130	-2.003	2.22	3.76	1.15
889	498	638	3442	20	130	1.195	0.85	0.51	0.15
891	638	536	2594	20	130	-0.766	0.54	0.17	0.07
893	706	618	1637	24	130	-3.580	1.76	0.77	0.47
895	482	706	4626	12	130	-0.328	0.65	0.76	0.16
897	688	708	2927	24	130	0.000	0.00	0.00	0.00
899	7030	456	10833	24	130	10.640	5.24	38.10	3.52
901	7064	710	12536	24	130	0.000	0.00	0.00	0.00
903	712	724	2028	12	130	0.000	0.00	0.00	0.00
911	716	718	3621	12	130	0.000	0.00	0.00	0.00
913	718	720	1228	20	130	0.000	0.00	0.00	0.00
919	728	666	2355	16	130	4.038	4.48	9.92	4.21
921	676	680	1482	16	130	2.348	2.60	2.29	1.54
923	720	7000	5019	24	130	0.000	0.00	0.00	0.00
925	724	710	679	20	130	0.000	0.00	0.00	0.00
927	726	274	2408	24	130	3.322	1.64	0.98	0.41
929	732	708	771	24	130	0.000	0.00	0.00	0.00
931	736	588	2915	24	130	8.190	4.03	6.31	2.17
933	738	450	2877	12	130	0.785	1.55	2.37	0.82
935	740	572	3740	12	130	-0.857	1.69	3.63	0.97
937	742	650	3994	12	130	0.931	1.83	4.51	1.13
939	744	726	3767	24	130	4.092	2.02	2.26	0.60
941	746	730	1545	16	130	1.574	1.74	1.14	0.74
943	748	570	1295	16	130	-2.422	2.68	2.12	1.64

**Golden Valley Ranch Distribution System - Peak Hour Tank Report**

ID	Demand (mgd)	Elevation (ft)	Head (ft)	Pressure (psi)	% Full (%)	Volume (MG)	Level (ft)
7000	-8.880	2,725.00	2,750.00	10.83	100	1.01	25
7010	-9.240	2,625.00	2,655.00	13	100	0.99	30
7022	-14.360	2,725.00	2,750.00	10.83	100	1.01	25
7024	0.000	1,668.00	1,668.00	0	100	0	0
7026	0.000	1,668.00	1,668.00	0	100	0	0
7028	0.000	1,668.00	1,668.00	0	100	0	0
7030	-10.640	2,635.00	2,665.00	13	100	0.99	30
7044	0.000	1,668.00	1,668.00	0	100	0	0
7046	0.000	1,668.00	1,668.00	0	100	0	0
7050	0.000	1,668.00	1,668.00	0	100	0	0
7054	0.000	1,668.00	1,668.00	0	100	0	0
7056	0.000	1,668.00	1,668.00	0	100	0	0
7058	0.000	1,668.00	1,668.00	0	100	0	0
7060	0.000	1,668.00	1,668.00	0	100	0	0
7062	0.000	1,668.00	1,668.00	0	100	0	0
7064	-11.780	2,825.00	2,850.00	10.83	100	1.01	25
7068	0.000	1,668.00	1,668.00	0	100	0	0
7070	0.000	1,668.00	1,668.00	0	100	0	0
7074	0.000	1,668.00	1,668.00	0	100	0	0
7076	0.000	1,668.00	1,668.00	0	100	0	0
7078	0.000	1,668.00	1,668.00	0	100	0	0
7080	0.000	1,668.00	1,668.00	0	100	0	0

GVR Distribution System  
Maximum Day  
Model Output

## Golden Valley Ranch Distribution System - Max Day Node Report

ID	Demand (mgd)	Elevation (ft)	Head (ft)	Pressure (psi)
10	0.000	2,690.00	2,747.66	24.99
14	0.000	2,565.00	2,733.91	73.19
16	0.240	2,542.00	2,733.82	83.12
212	0.370	2,542.00	2,732.95	82.74
270	0.000	2,518.00	2,733.81	93.51
272	0.140	2,515.00	2,646.62	57.03
274	0.220	2,495.00	2,646.48	65.63
276	0.110	2,515.00	2,646.58	57.01
356	0.000	2,495.00	2,646.48	65.63
448	0.460	2,490.00	2,646.46	67.79
450	0.110	2,485.00	2,643.41	68.64
452	0.480	2,465.00	2,643.29	77.25
454	0.280	2,475.00	2,646.46	74.3
456	0.250	2,500.00	2,648.58	64.38
472	0.900	2,625.00	2,733.91	47.19
474	0.350	2,518.00	2,733.25	93.27
480	0.440	2,560.00	2,734.19	75.48
482	0.320	2,519.21	2,646.30	55.07
490	0.460	2,570.54	2,736.18	71.77
492	0.000	2,597.29	2,738.91	61.36
498	0.000	2,567.00	2,733.67	72.22
526	0.260	2,502.00	2,733.65	100.37
528	0.000	2,557.00	2,733.66	76.55
534	0.000	2,592.00	2,735.05	61.98
536	0.610	2,550.00	2,733.16	79.36
538	0.000	2,620.00	2,734.02	49.4
540	0.460	2,529.00	2,733.63	88.67
542	2.100	2,540.00	2,732.51	83.41
544	2.100	2,540.00	2,733.73	83.94
546	0.000	2,565.00	2,735.04	73.68
550	0.480	2,580.00	2,738.00	68.46
56	0.090	2,600.00	2,733.91	58.02
570	0.730	2,460.00	2,640.91	78.39
572	0.280	2,460.00	2,644.81	80.08
576	0.490	2,478.00	2,644.33	72.07
588	0.530	2,515.00	2,738.94	97.03
600	2.290	2,560.00	2,734.59	75.65
604	0.000	2,572.00	2,734.19	70.28
608	3.020	2,525.00	2,647.49	53.07
616	0.000	2,555.00	2,733.87	77.5
618	0.000	2,475.00	2,647.05	74.55
636	0.270	2,550.00	2,733.18	79.37
638	2.100	2,572.00	2,733.20	69.85
646	0.550	2,430.00	2,642.51	92.08
648	0.230	2,410.00	2,641.41	100.27
650	0.160	2,430.00	2,640.91	91.39
662	0.140	2,718.00	2,831.62	49.23
666	0.000	2,655.00	2,821.99	72.36
672	1.110	2,621.00	2,819.45	85.99

**Golden Valley Ranch Distribution System - Max Day Node Report**

ID	Demand (mgd)	Elevation (ft)	Head (ft)	Pressure (psi)
674	0.280	2,625.00	2,818.71	83.93
676	0.300	2,622.00	2,818.36	85.08
680	0.000	2,642.00	2,818.18	76.34
682	0.510	2,660.00	2,818.02	68.47
688	0.000	2,536.00	2,664.91	55.86
700	0.000	2,475.00	2,664.91	82.29
702	0.000	2,500.00	2,664.91	71.46
704	0.000	2,440.00	2,664.91	97.45
706	0.000	2,470.00	2,646.49	76.47
708	0.000	2,560.00	2,664.91	45.46
710	0.000	2,640.00	2,850.00	90.99
712	0.000	2,610.00	2,850.00	103.99
716	0.000	2,657.00	2,750.00	40.3
718	0.000	2,670.00	2,750.00	34.66
720	0.000	2,680.00	2,750.00	30.33
722	0.000	2,660.00	2,744.80	36.74
724	0.000	2,625.00	2,850.00	97.49
726	0.000	2,505.00	2,646.62	61.37
728	2.810	2,621.00	2,823.77	87.86
730	0.000	2,645.00	2,816.04	74.11
732	0.990	2,555.00	2,664.88	47.61
734	0.000	2,610.00	2,750.00	60.66
736	0.000	2,545.00	2,741.52	85.15
738	0.370	2,480.00	2,643.78	70.97
740	0.150	2,455.00	2,643.69	81.76
742	0.270	2,447.00	2,643.45	85.12
744	0.350	2,523.00	2,646.95	53.71
746	1.680	2,652.00	2,816.04	71.08
748	2.580	2,445.00	2,640.24	84.6

## Golden Valley Ranch Distribution System - Max Day Pipe Report

ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (mgd)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/kft)
11	10	7000	2191	24	130	-5.586	2.75	2.34	1.07
13	10	722	2687	24	130	5.586	2.75	2.86	1.07
17	616	14	1029	24	130	-0.964	0.47	0.04	0.04
19	16	270	2642	24	130	0.349	0.17	0.02	0.01
287	16	212	590	8	130	0.371	1.64	0.87	1.48
369	726	272	1032	24	130	0.254	0.13	0.00	0.00
371	272	276	691	10	130	0.112	0.32	0.04	0.05
469	274	356	632	8	130	0.000	0.00	0.00	0.00
565	56	472	2158	24	130	-0.094	0.05	0.00	0.00
577	448	454	1689	24	130	-0.311	0.15	0.01	0.01
579	448	738	4499	12	130	0.658	1.30	2.67	0.59
581	450	452	2254	12	130	0.178	0.35	0.12	0.05
583	452	740	2875	12	130	-0.301	0.59	0.40	0.14
585	454	706	1528	24	130	-0.595	0.29	0.03	0.02
59	14	56	2604	24	130	-0.003	0.00	0.00	0.00
591	448	482	3356	12	130	0.167	0.33	0.16	0.05
609	270	474	418	8	130	0.349	1.55	0.55	1.32
615	480	14	1276	24	130	2.393	1.18	0.28	0.22
625	490	600	1744	24	130	5.124	2.52	1.58	0.91
627	492	490	2556	24	130	5.586	2.75	2.73	1.07
633	14	498	2718	24	130	1.432	0.71	0.23	0.09
663	528	498	1624	20	130	-0.285	0.20	0.02	0.01
665	528	540	2236	20	130	0.285	0.20	0.02	0.01
667	536	542	1527	20	130	2.100	1.49	0.65	0.42
673	534	550	3751	20	130	-2.932	2.08	2.95	0.79
675	472	538	2485	24	130	-0.990	0.49	0.11	0.04
677	538	534	4070	24	130	-2.573	1.27	1.03	0.25
679	540	526	3063	20	130	-0.175	0.12	0.01	0.00
681	526	544	3765	20	130	-0.435	0.31	0.09	0.02
683	544	536	1112	20	130	2.345	1.66	0.58	0.52
685	544	546	1570	24	130	-4.880	2.40	1.30	0.83
687	546	534	1868	24	130	-0.359	0.18	0.01	0.01
691	550	736	3388	20	130	-3.412	2.42	3.52	1.04
727	734	7022	9771	24	130	0.000	0.00	0.00	0.00
733	588	546	5416	24	130	4.521	2.23	3.90	0.72
747	600	480	1330	24	130	2.833	1.40	0.40	0.30
751	480	604	896	12	130	0.000	0.00	0.00	0.00
755	7010	608	9244	24	130	4.823	2.38	7.51	0.81
765	616	16	1013	24	130	0.964	0.47	0.04	0.04
767	618	456	2694	24	130	-3.974	1.96	1.53	0.57
771	608	744	4088	24	130	1.802	0.89	0.54	0.13
775	274	448	455	24	130	0.973	0.48	0.02	0.04
781	7022	736	10924	30	130	8.463	2.67	8.48	0.78
785	638	538	3259	20	130	-1.583	1.12	0.82	0.25
787	636	638	1784	20	130	-0.267	0.19	0.02	0.01
809	646	648	3529	16	130	0.990	1.10	1.10	0.31
811	648	650	2592	16	130	0.758	0.84	0.49	0.19
813	650	748	1350	16	130	1.279	1.42	0.68	0.50

## Golden Valley Ranch Distribution System - Max Day Pipe Report

ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (mgd)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/kft)
821	572	706	1157	16	130	-2.273	2.52	1.68	1.45
823	576	456	2405	16	130	-2.525	2.80	4.25	1.77
825	576	570	2894	16	130	2.034	2.25	3.42	1.18
827	618	742	3077	12	130	0.949	1.87	3.61	1.17
833	662	7064	11881	24	130	-6.828	3.36	18.38	1.55
835	662	728	5268	24	130	6.692	3.30	7.85	1.49
837	666	682	5245	16	130	1.598	1.77	3.97	0.76
845	672	674	1730	16	130	1.173	1.30	0.74	0.43
847	674	676	1383	16	130	0.889	0.99	0.35	0.26
853	682	680	1305	16	130	-0.590	0.65	0.16	0.12
855	682	746	2400	16	130	1.676	1.86	1.98	0.83
859	672	728	2958	16	130	-2.281	2.53	4.33	1.46
865	708	7030	6098	30	130	-0.988	0.31	0.09	0.01
877	722	492	5527	24	130	5.586	2.75	5.89	1.07
881	700	702	2623	20	130	0.000	0.00	0.00	0.00
883	702	688	3059	24	130	0.000	0.00	0.00	0.00
885	704	700	15658	20	130	0.000	0.00	0.00	0.00
887	646	572	3271	16	130	-1.536	1.70	2.30	0.70
889	498	638	3442	20	130	1.147	0.81	0.48	0.14
891	638	536	2594	20	130	0.364	0.26	0.04	0.02
893	706	618	1637	24	130	-3.025	1.49	0.56	0.34
895	482	706	4626	12	130	-0.156	0.31	0.19	0.04
897	688	708	2927	24	130	0.000	0.00	0.00	0.00
899	7030	456	10833	24	130	6.754	3.33	16.42	1.52
901	7064	710	12536	24	130	0.000	0.00	0.00	0.00
903	712	724	2028	12	130	0.000	0.00	0.00	0.00
911	716	718	3621	12	130	0.000	0.00	0.00	0.00
913	718	720	1228	20	130	0.000	0.00	0.00	0.00
919	728	666	2355	16	130	1.598	1.77	1.78	0.76
921	676	680	1482	16	130	0.590	0.65	0.18	0.12
923	720	7000	5019	24	130	0.000	0.00	0.00	0.00
925	724	710	679	20	130	0.000	0.00	0.00	0.00
927	726	274	2408	24	130	1.196	0.59	0.15	0.06
929	732	708	771	24	130	-0.988	0.49	0.03	0.04
931	736	588	2915	24	130	5.051	2.49	2.58	0.89
933	738	450	2877	12	130	0.290	0.57	0.38	0.13
935	740	572	3740	12	130	-0.454	0.89	1.12	0.30
937	742	650	3994	12	130	0.681	1.34	2.53	0.63
939	744	726	3767	24	130	1.450	0.71	0.33	0.09
941	746	730	1545	16	130	0.000	0.00	0.00	0.00
943	748	570	1295	16	130	-1.302	1.44	0.67	0.52

## Golden Valley Ranch Distribution System - Max Day Tank Report

ID	Demand (mgd)	Elevation (ft)	Head (ft)	Pressure (psi)	% Full (%)	Volume (MG)	Level (ft)
7000	-5.590	2,725.00	2,750.00	10.83	100	1.010	25
7010	-4.820	2,625.00	2,655.00	13	100	0.990	30
7022	-8.460	2,725.00	2,750.00	10.83	100	1.010	25
7024	0.000	1,668.00	1,668.00	0	100	0.000	0
7026	0.000	1,668.00	1,668.00	0	100	0.000	0
7028	0.000	1,668.00	1,668.00	0	100	0.000	0
7030	-7.740	2,635.00	2,665.00	13	100	0.990	30
7044	0.000	1,668.00	1,668.00	0	100	0.000	0
7046	0.000	1,668.00	1,668.00	0	100	0.000	0
7050	0.000	1,668.00	1,668.00	0	100	0.000	0
7054	0.000	1,668.00	1,668.00	0	100	0.000	0
7056	0.000	1,668.00	1,668.00	0	100	0.000	0
7058	0.000	1,668.00	1,668.00	0	100	0.000	0
7060	0.000	1,668.00	1,668.00	0	100	0.000	0
7062	0.000	1,668.00	1,668.00	0	100	0.000	0
7064	-6.830	2,825.00	2,850.00	10.83	100	1.010	25
7068	0.000	1,668.00	1,668.00	0	100	0.000	0
7070	0.000	1,668.00	1,668.00	0	100	0.000	0
7074	0.000	1,668.00	1,668.00	0	100	0.000	0
7076	0.000	1,668.00	1,668.00	0	100	0.000	0
7078	0.000	1,668.00	1,668.00	0	100	0.000	0
7080	0.000	1,668.00	1,668.00	0	100	0.000	0

## Appendix D

### Wastewater Contribution Calculations

## Golden Valley Ranch

### Sewer Contribution Calculation Spreadsheet

#### **Goal:**

Accurately estimate the sewer contributions demands of Golden Valley Ranch, a proposed master planned community in Mohave County, Arizona.

#### **Known:**

From the Lotting Matrix (12/9/05):

- ◆ Total Dwelling Units = 33,180 units
  - ◆ Town Center Units = 10,000 units
  - ◆ Total Residential Units = 23,180 units
    - ◆ Active Adult Residential Units = 12,230 units
    - ◆ Conventional (Single Family) Residential Units = 8,175 units
    - ◆ Apartment Residential Units = 2,775 units
- ◆ Total Developable Acres = 4,050 acres
- ◆ Calculated Overall Density = 5.77 units/acre

#### **Assumptions:**

- ◆ Average Sewer Contribution Rate Per Person= 80 gpd (0.17 AFY)
- ◆ Average Contribution per Active Adult Unit = 144 gpd
- ◆ Average Contribution per Single Family Unit = 240 gpd
- ◆ Average Contribution per High Density Unit = 168 gpd
- ◆ Maximum Month Peaking Factor = 1.2
- ◆ Maximum Day Peaking Factor = 2.0
- ◆ Peak Hour Peaking Factor = 3.0
- ◆ School Demand Factor = 800 gpd/acre
- ◆ Commercial Demand Factor = 1,750 gpd/acre

**Golden Valley Ranch**  
**Wastewater Contribution Summary**

	Average Day (mgd)	Maximum Month (mgd)	Maximum Day (mgd)	Peak Hour (mgd)
<b>Golden Valley South</b>	6.226	7.471	12.452	18.678
<b>Offsite Kingman Flow</b>	0.250	0.300	0.500	0.750
<b>Offsite Rhodes Flow</b>	1.472	1.766	2.943	4.415
<b>Total</b>	7.948	9.537	15.895	23.843

Maximum Month = 1.2 x Average Day

Maximum Day = 2.0 x Average Day

Peak Hour = 3.0 x Average Day

**Golden Valley Ranch**  
**Sewer Contributions by Phase**

**PHASE 1**

Parcel	Acreage	Land Use	Residential Units	Average Day (mgd)	Maximum Month (mgd)	Maximum Day (mgd)	Peak Hour (mgd)	H2O Map Manhole ID
1A	187.7	Active Adult	850	0.122	0.147	0.245	0.367	44
2A	204.2	Active Adult	815	0.117	0.141	0.235	0.352	18
3	104.9	Custom	150	0.036	0.043	0.072	0.108	26
4C	43.9	Conventional	271	0.065	0.078	0.130	0.195	26
5C	42.4	Conventional	262	0.063	0.075	0.126	0.189	30
7	85.5	Apartments	1539	0.259	0.310	0.517	0.776	36
8C	55.9	Conventional	315	0.076	0.091	0.151	0.227	38
9C	74.5	Conventional	332	0.080	0.096	0.159	0.239	34
10C	87.7	Conventional	388	0.093	0.112	0.186	0.279	70
11C	53.1	Conventional	289	0.069	0.083	0.139	0.208	70
54A	43.6	Active Adult	207	0.030	0.036	0.060	0.089	156
55A	47.3	Active Adult	208	0.030	0.036	0.060	0.090	156
59A	46.4	Active Adult	249	0.036	0.043	0.072	0.108	14
60A	74.7	Active Adult	413	0.059	0.071	0.119	0.178	20
61A	45.4	Active Adult	263	0.038	0.045	0.076	0.114	22
62A	28.0	Active Adult	169	0.024	0.029	0.049	0.073	24
Town Center		Town Center	1250	0.225	0.270	0.450	0.675	76
Park	14.0	Open Space		0.000	0.000	0.000	0.000	
School	48.4	School	N/A	0.039	0.046	0.077	0.116	86
<b>TOTAL</b>	<b>1,287.5</b>		<b>7,970</b>	<b>1.461</b>	<b>1.753</b>	<b>2.922</b>	<b>4.383</b>	

**PHASE 2**

Parcel	Acreage	Land Use	Residential Units	Average Day (mgd)	Maximum Month (mgd)	Maximum Day (mgd)	Peak Hour (mgd)	H2O Map Manhole ID
15C	100.0	Conventional	511	0.123	0.147	0.245	0.368	90
16C	109.9	Conventional	606	0.145	0.175	0.291	0.436	92
17C	70.9	Conventional	311	0.075	0.090	0.149	0.224	94
18C	64.5	Conventional	354	0.085	0.102	0.170	0.255	102
19C	73.1	Conventional	388	0.093	0.112	0.186	0.279	102
20C	126.6	Conventional	710	0.170	0.204	0.341	0.511	106
21C	81.5	Conventional	366	0.088	0.105	0.176	0.264	146
Park	61.5	Open Space	N/A	0.0	0.000	0.000	0.000	N/A
1/2 Town Center	0.0	Town Center	5000	0.900	1.080	1.800	2.700	76
<b>TOTAL</b>	<b>687.9</b>		<b>8,246</b>	<b>1.679</b>	<b>2.015</b>	<b>3.358</b>	<b>5.037</b>	

**PHASE 3**

Parcel	Acreage	Land Use	Residential Units	Average Day (mgd)	Maximum Month (mgd)	Maximum Day (mgd)	Peak Hour (mgd)	H2O Map Manhole ID
33A	69.1	Apartments	1245	0.179	0.215	0.359	0.538	50
39A	38.4	Active Adult	191	0.028	0.033	0.055	0.083	66
40A	54.3	Active Adult	239	0.034	0.041	0.069	0.103	62
41A	117.5	Active Adult	652	0.094	0.113	0.188	0.282	64
42A	60.0	Active Adult	355	0.051	0.061	0.102	0.153	58
43A	100.4	Active Adult	462	0.067	0.080	0.133	0.200	56
44A	17.6	Active Adult	494	0.071	0.085	0.142	0.213	174
45A	84.0	Active Adult	393	0.057	0.068	0.113	0.170	
46A	82.0	Active Adult	472	0.068	0.082	0.136	0.204	60
53A	64.7	Active Adult	284	0.041	0.049	0.082	0.123	176
Park	7.0	Open Space		0.000	0.000	0.000	0.000	
1/4 Town Center	30.1	Town Center	2500	0.450	0.540	0.900	1.350	52
<b>TOTAL</b>	<b>725.0</b>		<b>7,287</b>	<b>1.139</b>	<b>1.367</b>	<b>2.279</b>	<b>3.418</b>	

**Golden Valley Ranch**  
**Sewer Contributions by Phase**

**PHASE 4**

Parcel	Acreage	Land Use	Residential Units	Average Day (mgd)	Maximum Month (mgd)	Maximum Day (mgd)	Peak Hour (mgd)	H2O Map Manhole ID
22C	47.1	Conventional	270	0.065	0.078	0.130	0.194	124
23C	48.9	Conventional	244	0.059	0.070	0.117	0.176	126
24C	46.2	Conventional	264	0.063	0.076	0.127	0.190	130
25C	93.0	Conventional	535	0.128	0.154	0.257	0.385	136
26C	70.3	Conventional	297	0.071	0.086	0.143	0.214	144
27C	65.4	Conventional	299	0.072	0.086	0.144	0.215	142
28C	62.0	Conventional	316	0.076	0.091	0.152	0.228	140
29C	33.9	Conventional	217	0.052	0.062	0.104	0.156	138
30C	48.5	Conventional		0.000	0.000	0.000	0.000	
31C	52.6	Conventional		0.000	0.000	0.000	0.000	
32C	77.7	Conventional		0.000	0.000	0.000	0.000	
1/8 Town Center	30.1	Town Center	1250	0.225	0.270	0.450	0.675	52
Commercial	37.1	Commercial	N/A	0.065	0.078	0.130	0.195	134
<b>TOTAL</b>	<b>712.7</b>		<b>3,692</b>	<b>0.876</b>	<b>1.051</b>	<b>1.752</b>	<b>2.628</b>	

**PHASE 5**

Parcel	Acreage	Land Use	Residential Units	Average Day (mgd)	Maximum Month (mgd)	Maximum Day (mgd)	Peak Hour (mgd)	H2O Map Manhole ID
34A	81.0	Active Adult	466	0.067	0.081	0.134	0.201	116
35A	111.3	Active Adult	517	0.074	0.089	0.149	0.223	164
36A	89.1	Active Adult	524	0.075	0.091	0.151	0.226	120
37A	57.5	Active Adult	252	0.036	0.044	0.073	0.109	122
38A	61.8	Active Adult	298	0.043	0.051	0.086	0.129	164
<b>TOTAL</b>	<b>400.7</b>		<b>2,057</b>	<b>0.296</b>	<b>0.355</b>	<b>0.592</b>	<b>0.889</b>	

**PHASE 6**

Parcel	Acreage	Land Use	Residential Units	Average Day (mgd)	Maximum Month (mgd)	Maximum Day (mgd)	Peak Hour (mgd)	H2O Map Manhole ID
47A	119.0	Active Adult	555	0.080	0.096	0.160	0.240	160
48A	110.6	Active Adult	497	0.072	0.086	0.143	0.215	160
49A	19.0	Active Adult	122	0.018	0.021	0.035	0.053	160
50A	73.2	Active Adult	404	0.058	0.070	0.116	0.175	152
51A	57.9	Active Adult	331	0.048	0.057	0.095	0.143	154
52A	103.6	Active Adult	556	0.080	0.096	0.160	0.240	154
<b>TOTAL</b>	<b>483.3</b>		<b>2,465</b>	<b>0.355</b>	<b>0.426</b>	<b>0.710</b>	<b>1.065</b>	

**PHASE 7**

Parcel	Acreage	Land Use	Residential Units	Average Day (mgd)	Maximum Month (mgd)	Maximum Day (mgd)	Peak Hour (mgd)	H2O Map Manhole ID
6C	85.0	Conventional	489	0.117	0.141	0.235	0.352	28
12C	40.8	Conventional		0.000	0.000	0.000	0.000	
13C	33.9	Conventional		0.000	0.000	0.000	0.000	
14C	39.9	Conventional		0.000	0.000	0.000	0.000	
56A	83.8	Active Adult	482	0.069	0.083	0.139	0.208	12
57A	52.2	Active Adult	311	0.045	0.054	0.090	0.134	10
58A	29.2	Active Adult	181	0.026	0.031	0.052	0.078	10
Regional Park	152.3	Open Space		0.000	0.000	0.000	0.000	
Commercial	92.5	Commercial	N/A	0.162	0.194	0.324	0.486	180
<b>TOTAL</b>	<b>609.6</b>		<b>1,463</b>	<b>0.419</b>	<b>0.503</b>	<b>0.839</b>	<b>1.258</b>	

<b>GRAND TOTAL</b>	<b>4,906.6</b>		<b>33,180</b>	<b>6.226</b>	<b>7.471</b>	<b>12.452</b>	<b>18.678</b>	
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**Golden Valley Ranch  
Offsite Sewer Contributions**

Township No.	Acres	Developable Acres	# of Units	Average Day Flow
1	28	21	124	29,700
5	50	38	225	54,000
32	20	15	90	21,600
33	70	53	315	75,600
34	40	30	180	43,200
35	110	83	495	118,800
36	120	90	540	129,600
25	90	68	405	97,200
26	120	90	540	129,600
27	180	135	810	194,400
29	20	15	90	21,600
24	80	60	360	86,400
23	140	105	630	151,200
22	100	75	450	108,000
21	55	41	248	59,400
10	60	45	270	64,800
13	40	30	180	43,200
14	40	30	180	43,200
<b>Total</b>	<b>1,363</b>	<b>1,022</b>	<b>6,131</b>	<b>1,471,500</b>

Developable Acres = Total Acres x 75%

# of Units = Developable Acres x 6 Units/Acre

Average Day Flow = # of Units x 240 Gallons/ Units

## Appendix E

### Sanitary Sewer Model Output

# GVR South Sewer System Model|